

#### § 42.20-9

withstand the flooding of any two adjacent fore and after compartments excluding the machinery space;

(2) If the vessel is over 225 meters (738 feet) in length, the flooding standard of paragraph (a)(1) of this section must be applied, treating the machinery space, taken alone, as a floodable compartment.

(b) When doing the calculations required in paragraph (a) of this section, the following permeabilities must be assumed:

(1) 0.95 in all locations except the machinery space.

(2) 0.85 in the machinery space.

[CGD 79-153, 48 FR 38648, Aug. 25, 1983]

#### § 42.20-9 Initial conditions of loading.

When doing the calculations required in §§ 42.20-6(a), 42.20-7(a) and 42.20-8(a), the initial condition of loading before flooding must be assumed to be as specified in this section:

(a) The vessel is assumed to be loaded to its summer load waterline with no trim.

(b) When calculating the vertical center of gravity, the following assumptions apply:

(1) The cargo is assumed to be homogeneous.

(2) Except as specified in paragraph (b)(3) of this section, all cargo compartments are assumed to be fully loaded. This includes compartments intended to be only partially filled. In the case of liquid cargoes, fully loaded means 98 percent full.

(3) If the vessel is intended to operate at its summer load waterline with empty compartments, these empty compartments are assumed to be empty rather than fully loaded if the resulting height of the vertical center of gravity is not less than the height determined in accordance with paragraph (b)(2) of this section.

(4) Fifty percent of the total capacity of all tanks and spaces fitted to contain consumable liquids or stores must be assumed to be distributed to accomplish the following:

(i) Each tank and space fitted to contain consumable liquids or stores must be assumed either completely empty or completely filled.

(ii) The consumables must be distributed so as to produce the greatest pos-

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sible height above the keel for the center of gravity.

(5) Weights are calculated using the following values for specific gravities:

Salt water—1.025  
Fresh water—1.000  
Oil fuel—0.950  
Diesel oil—0.900  
Lube oil—0.900

[CGD 79-153, 48 FR 38648, Aug. 25, 1983]

#### § 42.20-10 Free surface.

When doing the calculations required in §§ 42.20-6(a), 42.20-7(a) and 42.20-8(a), the effect of free surface of the following liquids must be included:

(a) For each type of consumable liquid, the maximum free surface of at least one transverse pair of tanks or a single centerline tank must be included. The tank or combination of tanks must be that resulting in the greatest free surface effect.

(b) For cargo liquids, unless the compartment is assumed to be empty as required by § 42.20-9(b)(3), the free surface of those compartments containing liquids is calculated at an angle of heel of not more than 5 degrees.

[CGD 79-153, 48 FR 38649, Aug. 25, 1983]

#### § 42.20-11 Extent of damage.

When doing the calculations required by §§ 42.20-6(a), 42.20-7(a) and 42.20-8(a), the following must be assumed:

(a) The vertical extent of damage in all cases must be assumed to be from the baseline upward without limit.

(b) The transverse extent of damage is assumed to be equal to B/5 or 11.5 meters (37.7 feet), whichever is less. The transverse extent is measured inboard from the side of the ship perpendicularly to the center line at the level of the summer load waterline.

(c) If damage of a lesser extent than that specified in paragraph (a) or (b) of this section results in a more severe condition, the lesser extent must be assumed.

(d) The following assumptions apply to the transverse damage specified in paragraph (b) of this section for a stepped or recessed bulkhead:

(i) A transverse watertight bulkhead that has a step or recess located within the transverse extent of assumed damage may be considered intact if the